IN THE CLAIMS

Please cancel Claims 24-38 without prejudice.

1. (original) A method for the spatially resolved determination of mechanical, physical, chemical and/or biological properties or state variables and/or the change in mechanical, physical, chemical and/or biological properties or state variables in an examination area of an examination object by means of the following steps:

a) introducing magnetic particles into at least part of the examination area,

b) generating a magnetic field with a spatial profile of the magnetic field strength such that there is produced in the examination area a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength,

c) generating a superposed oscillating or rotating magnetic field at least partially in the first part-area having a low magnetic field strength, so that at least some of these magnetic particles oscillate or rotate,

d) irradiating electromagnetic radiation into the examination area by means of at least one radiation source and

e) detecting the reflected and/or scattered electromagnetic radiation by means of at least one detector and determining the intensity, absorption and/or polarization of the reflected and/or scattered electromagnetic radiation.

2. (original) A method as claimed in claim 1, characterized in that the, in particular relative, spatial position of the two part-areas in the examination area is changed so that the magnetization of the particles changes locally, and the signals which depend on the magnetization in the examination area that is influenced by this change are detected and evaluated so as to obtain information about the spatial distribution and/or the change in the spatial distribution of the magnetic particles in the examination area.

3. (previously presented) A method as claimed in claim 1, characterized in that the magnetic particles are superparamagnetic particles, in particular with an effective anisotropy, ferromagnetic monodomain particles with an effective anisotropy that is sufficient for the particles still to behave in a superparamagnetic manner only in a suspension, soft-magnetic particles, in particular having an anisotropy, and/or hard-magnetic particles.

4. (previously presented) A method as claimed in claim 1, characterized in that the magnetic particles are in a liquid, viscous or gel-like shell in the examination area or are introduced into said shell.

5. (previously presented) A method as claimed in claim 1, characterized in that the electromagnetic radiation used is microwave, infrared, VIS, ultraviolet and/or X-ray radiation.

6. (previously presented) A method as claimed in claim 1, characterized in that at least one optical contrast agent, in particular a fluorescent contrast agent, is introduced into or present in the examination area.

7. (previously presented) A method as claimed in claim 1, characterized in that the scattered and/or reflected electromagnetic radiation is detected and evaluated in a direction-dependent manner.

8. (previously presented) A method as claimed in claim 1, characterized in that the change in intensity of the scattered and/or reflected electromagnetic radiation is detected as a function of the oscillation mode or the rate of rotation.

9. (previously presented) A method as laimed in claim 1, characterized in that electromagnetic radiation of at least one specific wavelength and/or wavelength spectrum is used.

10. (previously presented) A method as claimed in claim 1, characterized in that the radiation source is an optical fiber or a number of optical fibers, in particular integrated in a catheter or an endoscope.

11. (previously presented) A method as claimed in claim 1, characterized in that the part-area having a low magnetic field strength is moved by actuating and/or moving the coil arrangement or in that in the case of a stationary part-area having a low magnetic field strength the examination object is moved or in that the examination object and the part-area having a low magnetic field strength are moved relative to one another at the same time.

12. (previously presented) An arrangement (1) for carrying out the method as claimed in claim 1, comprising

a) at least one device (10) for generating a magnetic gradient field (2) in at least one examination area of the examination object (A), said device comprising a means for generating a magnetic field with a spatial profile of the

magnetic field strength such that there is produced in the examination area a first part-area (4) having a low magnetic field strength and a second part-area (8) having a higher magnetic field strength,

b) at least one radiation source (12) for generating electromagnetic radiation and

c) at least one detector (22) for recording reflected and/or scattered electromagnetic radiation.

13. (original) An arrangement (1) as claimed in claim 12, further comprising a means for changing the, in particular relative, spatial position of the two part-areas in the examination area so that the magnetization of the particles changes locally, a means for detecting signals which depend on the magnetization in the examination area that is influenced by this change and a means for evaluating the signals so as to obtain information about the spatial distribution of the magnetic particles in the examination area.

14. (previously presented) An arrangement (1) as claimed in claim 12, characterized in that the means for generating the magnetic field comprise a gradient coil arrangement for generating a magnetic gradient field which in the first part-

area of the examination area reverses its direction and has a zero crossing.

15. (previously presented) An arrangement (1) as claimed in claim 12, characterized by means for generating a temporally changing magnetic field that is superposed on the magnetic gradient field, for the purpose of moving the two part-areas in the examination area.

16. (previously presented) An arrangement (1) as claimed in claim 12, characterized by a coil arrangement for receiving signals induced by the temporal change in the magnetization in the examination area.

17. (previously presented) An arrangement (1) as claimed in claim 12, characterized by means for generating a first and at least a second magnetic field that are superposed on the magnetic gradient field, where the first magnetic field changes slowly in time terms and with a high amplitude and the second magnetic field changes rapidly in time terms and with a low amplitude.

18. (original) An arrangement (1) as claimed in claim 17, characterized in that the two magnetic fields run essentially perpendicular to one another in the examination area.

19. (previously presented) An arrangement (1) as claimed in claim 12, characterized in that there is at least one monochromator (16), chopper (18) and/or polarizer (20) between the radiation source (12) and the examination area.

20. (previously presented) An arrangement (1) as claimed in claim 12, characterized in that the radiation source is a laser.

21. (previously presented) An arrangement (1) as claimed in claim 12, characterized in that there is at least one analyzer (26), in particular in the form of a polarization filter, and/or one monochromator (28) between the detector (22) and the examination area.

22. (previously presented) An arrangement (1) as claimed in claim 12, characterized by an evaluation unit (30) for determining and/or evaluating the detected radiation signals.

23. (previously presented) An arrangement (1) as claimed in claim 12, characterized in that the detector (22) is a camera or

is connected to or in effective connection with the latter and/or with an evaluation unit (30), in particular a microprocessor.

Claims 24-38 (cancelled).